

Legislative Audit Division

State of Montana



Report to the Legislature

October 1997

EDP Audit

Information Processing Facility and Central Applications

Each year the Legislative Audit Division audits the state's central computer facility and centralized computer applications. This report is used by financial-compliance and performance auditors and contains our conclusions and/or recommendations for improving general controls over the mainframe computer (Information Processing Facility) and application controls over the following systems:

- ▶ **State Payroll System**
- ▶ **Statewide Budgeting and Accounting System**
- ▶ **Warrant Writer System**

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97DP-02

EDP AUDITS

Electronic Data Processing (EDP) audits conducted by the Legislative Audit Division are designed to assess controls in an EDP environment. EDP controls provide assurance over the accuracy, reliability, and integrity of the information processed. From the audit work, a determination is made as to whether controls exist and are operating as designed. In performing the audit work, the audit staff follows audit standards set forth by the United States General Accounting Office.

Members of the EDP audit staff hold degrees in disciplines appropriate to the audit process.

EDP audits are performed as stand-alone audits of EDP controls or in conjunction with financial-compliance and/or performance audits conducted by the office. These audits are done under the oversight of the Legislative Audit Committee which is a bicameral and bipartisan standing committee of the Montana Legislature. The committee consists of six members of the Senate and six members of the House of Representatives.

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October 1997

The Legislative Audit Committee
of the Montana State Legislature:

This is our EDP audit of controls relating to the state's centralized data processing systems operated by the Department of Administration. We reviewed the department's general and application controls over State Payroll, Statewide Budgeting and Accounting System (SBAS), and the Warrant Writer system. This report contains recommendations for improving controls related to those systems. Written responses to our audit recommendations are included in the back of the report.

We thank the Department of Administration for their cooperation and assistance throughout the audit.

Respectfully submitted,

"Signature on File"

Scott A. Seacat
Legislative Auditor

Legislative Audit Division

EDP Audit

Information Processing Facility and Central Applications

Members of the audit staff involved in this audit were Ken Erdahl, Alan Lloyd, Susan McEachern, Rene Silverthorne, and Lon Whitaker.

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Appointed and Administrative Officials

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Paul Rylander, Bureau Chief
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John McEwen, Acting Administrator
Personnel Division

John McEwen, Bureau Chief
Classification and Pay Bureau

Donna F. Warner, Manager
State Payroll

Introduction

This Electronic Data Processing (EDP) audit includes a general controls review of the state's mainframe computer, and application reviews of State Payroll, Statewide Budget and Accounting System (SBAS), and Warrant Writer.

General Controls

The Department of Administration's Information Processing Facility (IPF) is located in the Mitchell Building in Helena. The mission of IPF staff is to provide reliable, effective, and efficient centralized computing services to state agencies and other government units 24 hours per day, seven days a week. They provide computing operations support services, and develop training curriculum. They also support state agencies in the implementation and use of information technology by providing application system design, development, and technical support services. IPF supports the mainframe environment plus the mid-tier and personal computing environments. They also provide central coordination for Year 2000 problem resolution.

General controls are developed by management to ensure central computer operations function as intended and provide effective data processing service to users. Overall general controls specific to mainframe processing services provided controlled application processing during fiscal year 1996-97.

Application Controls

The Department of Administration operates the SBAS, State Payroll, and Warrant Writer systems. These systems provide centralized accounting, payroll, and warrant writing functions to state agencies and units of the Montana University System. SBAS is an accounting system which provides financial reporting of agency transactions. State Payroll processes payroll for state agencies and units of the Montana University System. Warrant Writer creates state warrants from agency submitted claims processed through SBAS.

Overall application controls ensure SBAS, State Payroll, and Warrant Writer transactions are input completely and accurately, are processed as intended, and resulting output is accurate and distributed to only authorized personnel. Audit issues address areas where the department could improve internal procedures and operations to ensure continued reliability over SBAS transaction processing.

Chapter I - Introduction

Introduction

This is our annual electronic data processing (EDP) audit of the state's centralized data processing systems operated by the Department of Administration. The audit included central controls over the state's mainframe computer and three computer based applications: State Payroll, Warrant Writer, and the Statewide Budgeting and Accounting System (SBAS). The controls identified and tested can be relied upon by financial-compliance, performance, and EDP auditors for the fiscal year 1996-97 audit period.

Organization of Report

The report contains three chapters. Chapter I contains the introduction, background information, and audit objectives. Chapter II discusses our review of general controls applicable to the Department of Administration's Information Processing Facility. Chapter III includes our application review of the department's SBAS, State Payroll, and Warrant Writer computer applications.

EDP General and Application Controls

EDP controls provide assurance over the accuracy, reliability, and integrity of the information processed. From the audit work, a determination is made as to whether controls exist and are operating as designed. A general control review provides information about the environment in which the computer systems operate and includes an examination of the controls in place over the computer applications. Applications must operate within the general control environment for reliance to be placed on them.

Application controls are specific to a given application or set of programs that accomplish a specific objective. An application controls review consists of an examination of controls over input, processing and output.

Audit Objectives

The objectives of this audit were to determine if general and application controls over the SBAS, State Payroll, and Warrant Writer applications are adequate to ensure accuracy and reliability of the data processed by those applications. Based on the results of this audit, financial-compliance, performance, and EDP auditors can rely on the audited controls and reduce their testing accordingly.

Chapter I - Introduction

Audit Scope and Methodology

The audit was conducted in accordance with generally accepted government auditing standards. We compared existing general and application controls against criteria established by the American Institute of Certified Public Accountants (AICPA), United States General Accounting Office (GAO), and the EDP industry.

We reviewed the Department of Administration's general controls related to the state mainframe environment. We interviewed department personnel to gain an understanding of the hardware and software environment at the Department of Administration. We also examined documentation to supplement and confirm information obtained through interviews.

We examined procedures within the mainframe environment which ensure computer processing activities are controlled. For example, we determined if mainframe equipment is maintained in a secured area and access is limited to authorized personnel. The department provides data entry and processing services to state agencies. We reviewed department procedures which ensure data processing is completed per agency authorization.

We conducted application reviews over State Payroll, Warrant Writer, and SBAS. We interviewed employees of the Department of Administration to evaluate policies and procedures. We reviewed input, processing, and output controls for these systems. We also reviewed supporting documentation to determine if controls over data are effective as well as adequate to ensure the accuracy of data during processing phases.

Controls over centralized operations are supplemented by controls established at user agencies. We did not review controls established by user agencies.

This report contains four recommendations to the department. Areas of concern deemed not to have a significant effect on the control environment are not included in this report, but have been discussed with management.

Chapter I - Introduction

Compliance

We determined the Department of Administration to be in compliance with applicable laws, rules and state policy, as tested.

Prior Audit Recommendations

Our prior audit report for fiscal year 1995-96 included three recommendations applicable to the Department of Administration. The department concurred with each recommendation. The department implemented all three recommendations.

Chapter II - General Controls

Introduction

The department's Information Processing Facility (IPF) is located in the Mitchell Building in Helena and is administered by the department's Information Services Division (ISD). State employees process application programs and data stored on the mainframe through personal computers and terminals located across the state. This chapter discusses our review of management's operating procedures and controls which ensure continuous, reliable, and accurate mainframe data processing services.

Conclusion: General Controls Provide Controlled Application Processing for Fiscal Year 1996-97

Overall general controls specific to mainframe processing services provided controlled application processing during fiscal year 1996-97.

Physical Security

Physical security controls provide security against accidental loss or destruction of data and program files and equipment, and ensure continuous operation of application processing functions. Physical security controls include: safeguarding of files, programs and documentation; physical access over the computer facility; and a plan or method to ensure continuity of operations following major destruction of files or hardware breakdown.

We reviewed existing physical controls at the Information Processing Facility. The department maintains computer hardware on a raised floor. Smoke alarms function properly. Air conditioning maintains controlled computer room temperature. The power supply meets computing equipment needs.

The department continues to improve its ability to recover the Information Processing Facility following a disaster. The following section discusses the department's disaster recovery plan and implementation status during fiscal year 1996-97.

Chapter II - General Controls

Disaster Recovery - Background

The department received funding from the 1991 Legislature to design and implement a contingency plan, which included a "hotsite" and the appropriate backup equipment. A hotsite agreement provides ISD an alternative location and equipment necessary to recover mainframe computer operations. In April 1997, ISD renewed a five year contract for a backup hotsite with Weyerhaeuser Information Systems in Federal Way, Washington. The contract provides for annual on-site recovery testing of the central mainframe operating system and agency-owned applications.

During fiscal year 1996-97 ISD finalized a recovery plan which defines ISD personnel responsibilities, hardware and software requirements, and mainframe operating system recovery procedures. ISD conducted semi-annual recovery tests in November 1996 and May 1997.

Ongoing Recovery Plans

ISD continues to work with interested state agencies to test recovery of agency-owned applications and verify recovery procedures are reliable. Although ISD can recover agency applications and provide mainframe connection capabilities for agency-owned terminals, ISD cannot define agency application recovery priorities or personnel responsibilities. ISD provides guidance to state agencies for documenting agency application recovery procedures within the plan.

Disaster recovery planning requires ongoing preparation. By establishing documented procedures, ISD significantly improves its ability to recover mainframe computing operations following a disaster. We will continue to review the status of ISD's disaster recovery plan.

Job Scheduler Access Should be Controlled

One of the services provided to agencies by ISD is input/output (I/O) control. Under this function, ISD personnel submit scheduled batch jobs for nightly processing. The I/O controller ensures jobs were submitted as scheduled, they are coordinated with related jobs, and they run completely and without error.

In fiscal year 1997, much of the I/O function was automated in a program called "Job Scheduler." Using Job Scheduler, recurring jobs can be scheduled to run at particular times, days of the week,

Chapter II - General Controls

month or year. Where jobs are inter-related, Job Scheduler can prevent a job from starting until another job has completed. It will also detect errors in processing, and notify the computer operator of the problems.

Submission of batch jobs may be very critical to the operations of the agencies. Therefore, control over the access to Job Scheduler, and the programs contained therein, is critical. Access is given to personnel through an "access authorization" form, which is reviewed and approved by agency management prior to activating the access.

We found the authorization forms are being used by ISD, and are on file for many of the users with access to Job Scheduler. However, we also found several users with critical (write and/or delete) access that did not have authorization forms on file. To simplify the process of activating access, the security officer gave access to groups of people, rather than specific individuals. For instance, seven contract programmers submitted authorized request forms for critical level access to Job Scheduler programs. Access was given to the contract programmer group as a whole. This resulted in 17 separate users with access, while only seven had authorization.

Unauthorized access to Job Scheduler programs could result in inappropriate changes to critical jobs on the system. This could cause production errors and/or delays. The Job Scheduler security officer should ensure all individuals with access to the programs are authorized through the use of individual authorization forms.

Recommendation #1

We recommend the department ensure only authorized individuals have access to Job Scheduler.

Chapter III - Application Controls

Introduction

The Department of Administration operates the Statewide Budgeting and Accounting System (SBAS), State Payroll, and Warrant Writer systems. These systems provide centralized accounting, payroll, and warrant writing functions for state agencies and units of the Montana University System. We reviewed application controls over these systems to ensure the systems processed information as intended during fiscal year 1996-97.

Statewide Budgeting and Accounting System

SBAS provides uniform accounting and reporting for all state agencies by showing receipt, use, and disposition of public money and property in accordance with generally accepted accounting principles. SBAS also provides budgetary control data used for agency management decisions.

SBAS is a combination of on-line entry and batch update. State agencies input transactions to the SBAS database. SBAS edits check the data to ensure validity. If a transaction does not pass an edit, it will be rejected from processing and may require correction. Transactions which pass all edits are processed and posted to the SBAS database.

Conclusion: SBAS Application Controls Effective and Adequate for Fiscal Year 1996-97

We reviewed input, processing, and output controls over SBAS during fiscal year 1996-97. Overall application controls ensured SBAS transactions were completely and accurately processed. The following sections discuss areas where Accounting Bureau could improve internal procedures and operations to ensure continued reliability over SBAS transaction processing.

Inconsistent Management Information

When an agency enters a transaction on SBAS, certain accounting codes, specific to the transaction, are also entered. These accounting codes identify where the financial information will be accounted for, such as a responsibility center or program, to provide management the information necessary to control their operations. SBAS maintains tables within the system, identifying valid accounting codes and how the codes interrelate. A responsibility center (R/C) accounts for designated financial activity, and is unique to an agency. The Accounting Bureau, of the Department of Administration, has delegated the authority for state agencies to

Chapter III - Application Controls

change the interrelations associated with their agency-specific R/Cs, such as add, modify, or delete.

We determined there are no procedures in place to ensure code changes made by state agencies do not result in inconsistent reporting of financial information on SBAS. Following are two examples of inconsistent reporting of SBAS information.

- An agency changed the program to which R/C activity is assigned. For example, R/C 1 activity originally accounted for in program 100 is changed mid-year, and now is accounted for in program 200. Since the agency did not adjust the transaction entered prior to the change, there is no audit trail accounting for the move in financial activity. As a result, the SBAS Program Report summarizes the entire activity for the R/C in program 200. However, the transaction detail still shows the transaction reporting to program 100.
- An agency's appropriation authority is inconsistently reported between two fiscal year-end SBAS reports. The agency intended to reallocate its budget within R/Cs. However, the new R/Cs are accounted for in a different program. As a result, the Appropriation Summary report identifies the original budget allocation and the Program report reflects the allocation between the two programs. Total appropriation authority did not increase. However, the allocation between programs is inconsistently reported.

Since agencies may not be aware of the programming aspects of SBAS, it is the department's responsibility to ensure procedures are in place to maintain the integrity of its financial reporting system. If the department delegates the authority to make agency-specific accounting code changes, at a minimum, they should have procedures in place to ensure the appropriate adjustments are also made. Department personnel stated they agree that the problem could be corrected with programming changes but are reluctant to incur the costs at this time, considering the system will be replaced within the next year or two. They stated they will consider this problem in the design of the new system.

Chapter III - Application Controls

Recommendation #2

We recommend the department establish procedures to ensure the financial activity is reported in a consistent manner on SBAS.

State Payroll System

The State Payroll System processes payroll for state agencies and selected units of the Montana University System. The system also includes personnel and position control components, providing information about employees or management information necessary for budgeting purposes.

The payroll component of the State Payroll System issues and tracks state of Montana employees' wage and benefit payments. Similar to SBAS, processing is completed through a combination of on-line entry and batch update. State agencies and university units input employee time information, and the State Payroll System retrieves and checks the data against edits to ensure validity. Payroll data which fails edit tests is corrected prior to further processing. Once all payroll data is corrected, State Payroll personnel submit a job which calculates gross pay, deductions, net pay, and leave and service adjustments. In addition, the system automatically bills state agencies for their payroll costs, updates SBAS for payroll expenditures, and prepares payroll reports.

Conclusion: State Payroll Application Controls Effective and Adequate for Fiscal Year 1996-97

The audit was limited to payroll transactions processed through the State Payroll System. Overall application controls ensured payroll transactions processed accurately and completely during fiscal year 1996-97. The following section discusses an area where State Payroll could improve internal procedures and operations to ensure continued reliability over payroll transaction processing.

Chapter III - Application Controls

Develop a Disaster Recovery Plan

As noted on page 6 of this report, ISD has developed a disaster recovery plan for the recovery of the mainframe computer, in the event of a disaster. However, it is the agencies' responsibility to develop their own recovery procedures for the individual applications. As evidenced by the disaster recovery tests conducted at the hotsite, ISD has the ability to recover the state payroll application. However, agency personnel have indicated specific procedures are not documented. A plan was developed several years ago, but is incomplete and out-of-date.

A disaster recovery plan may include but is not limited to:

- An inventory of current applications, operating system programs, telecommunications programs or networks, and hardware.
- An analysis to determine application significance and impact of loss.
- An analysis to determine application recovery priority.
- Selecting a disaster recovery method depending on how long the organization can operate without processing, management's backup procedures, and cost.
- Identification, involvement, and commitment of employees responsible for operating applications.
- Definition of application requirements including personnel, hardware, system support programs, communications, data, special forms, etc.

Documented and tested recovery procedures allow normal operations to resume as quickly as possible following a disaster. Without a complete disaster recovery plan which defines department responsibilities and requirements, the department may be unable to recover its applications in a timely manner.

The department should define agency application recovery priorities and personnel responsibilities. We encourage the department to continue working with ISD to complete disaster recovery procedures for the state payroll application.

Recommendation #3

We recommend the department document disaster recovery procedures for the state payroll application.

Warrant Writer System

The Warrant Writer system controls creation and distribution of most state warrants, and accounts for state warrants issued, outstanding, and redeemed. The system creates state warrants from agency submitted claims processed through SBAS.

Conclusion: Warrant Writer Application Controls Effective and Adequate for Fiscal Year 1996-97

Overall application controls ensured warrant writer transactions processed accurately and completely during fiscal year 1996-97. The following section discusses an area where Warrant Writer could improve internal procedures and operations to ensure continued reliability over payroll transaction processing.

Revolving Fund Reconciliation Should be Completed Monthly

The Warrant Writing section processes warrants through a general warrant account. When agencies process a claim, funds are transferred from the agency's account to the general warrant account. When the warrant is written and distributed, funds are transferred from the general warrant account to the treasury account, for payment of the cashed warrants. Theoretically, these two steps would make the general warrant account balance to zero every day. However, due to timing, errors, and other considerations, there is always a balance in the account. Department policy requires reconciliation of the general warrant account to identify why it does not equal zero.

We determined a reconciliation is not being performed each month. At the time of our audit, the account reconciliation had not been done for four months. In addition, the account had been out-of-balance by \$14,779 since August, 1996. To date, the difference remains unresolved. The reconciliations should be complete after monthly SBAS transaction reports are completed to ensure accounting or warrant writer errors are detected and resolved.

Chapter III - Application Controls

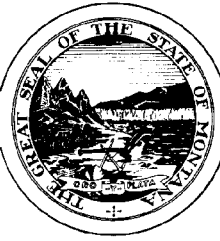
Recommendation #4

We recommend the department:

- A. Resolve the differences between the Warrant Writer System and SBAS.**
- B. Ensure the monthly reconciliations are done in a timely manner.**

Agency Response

DEPARTMENT OF ADMINISTRATION
DIRECTOR'S OFFICE



MARC RACICOT, GOVERNOR

MITCHELL BUILDING

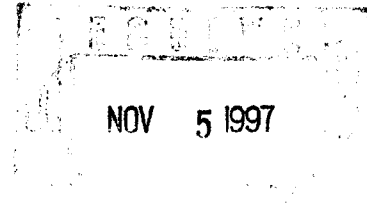
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November 4, 1997

Scott A. Seacat
Legislative Audit Division
State Capitol
Helena, MT 59620



Dear Mr. Seacat:

We have reviewed the recommendations in the Information Processing Facility and Central Applications EDP Audit dated October 1997. Our responses follow:

Recommendation #1: We recommend the department ensure only authorized individuals have access to Job Scheduler.

Response: We concur. The rule that allows access to the Job Scheduler environment was written to permit access by groups to facilitate use of the software during the training period conducted by ISD operations. The rules that control individual functions within the Scheduler environment were written more specifically in accordance with the authorization forms received from the agencies. We will comply with this recommendation and will revise the Job Scheduler access rules to ensure only authorized individuals have access.

Recommendation #2: We recommend the department establish procedures to ensure the financial activity is reported in a consistent manner on SBAS.

Response: We concur that financial information should be reported in a consistent manner. The problem could potentially be corrected with programming changes to SBAS. However, the Department is reluctant to incur the cost at this time because SBAS will be replaced by MTPRRIME within the next two years. This problem will be considered in the design of the new financial system.

Recommendation #3: We recommend the department document disaster recovery procedures for the state payroll application.

Response: We concur. We will document disaster recovery procedures for the state payroll application as suggested in the audit report and plan to complete this process by April 1998.

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Scott A. Seacat
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Page 2

Recommendation #4: We recommend the department:

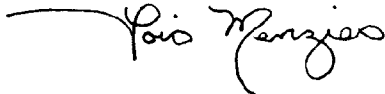
- A. Resolve the differences between the Warrant Writer System and SBAS.**
- B. Ensure the monthly reconciliations are done in a timely manner.**

Response:

- A. We concur. The Department is working diligently to resolve the discrepancy that occurred in August 1996. Another staff person from the Management Support Bureau will be assigned to this project in an effort to resolve the discrepancy as soon as possible.
- B. We concur. The monthly reconciliations fell behind because of the time spent resolving the discrepancy of August 1996. Monthly reconciliations between SBAS and the Warrant Writer system are now complete through August 1997 with the exception of the discrepancy noted above and will be current within the next two months.

We appreciate the opportunity to work with your staff on these issues.

Sincerely,



LOIS MENZIES
Director